THREE WATERS PARK (PWSNO 1090235)
SOURCE WATER ASSESSMENT REPORT

November 19, 2002

State of Idaho
Department of Environmental Quality

SOURCE WATER ASSESSMENT FOR THREE WATERS PARK

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Three Waters Park, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Three Waters Park* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Three Waters Park is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. A 20-foot deep well located about 30 feet from Priest River supplies drinking water to 1 full time and 23 seasonal homes in Three Water Park. The park is located at the head of Priest River. The well log for the Three Waters Park well in not on file with DEQ, so several construction features used to assess vulnerability to contamination are unknown. The well was dug in 1967 and deepened to 20 feet in 1977. The water system was not in compliance with the *Idaho Rules for Public Drinking Water Systems* when it was inspected in 1997. Among other deficiencies, the casing terminated below ground and the well seal was not visible for inspection. Work completed in November 2001 raised the well casing and vent the required distance above grade.

The 1997sanitary survey also noted violations of required separation distances between the well and the river and the well and septic system components serving lot 30. IDAPA 16.01.08 (rules) specify a minimum 50 foot separation distance between public drinking water wells and surface water; a minimum of 50 feet between sanitary sewer lines and a well; and a minimum of 100 feet between a well and individual septic tank. Maps in the public water system file for Three Waters Park that were drawn after 1997 show that the sewer line is located more than the minimum distance from the well. The system applied for a waiver from the required setback between the river and the well in October 2002. If the waiver is granted, the park plans to relocate the septic tank and sewer lines immediately, and to relocate a water line, which will eliminate a broken section that may be a source of bacterial contamination.

Well Site Characteristics. Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineation. Soils in the well recharge zone for The Three Waters Park well are generally poorly drained to moderately well drained. Soils in these drainage classes provide some protection against migration of contaminants toward the well. Because the well log is unavailable, no information is at hand about the soil types above the water table at the Three Waters Park well site.

Potential Contaminant Inventory. Land inside the protection zone delineated for Three Waters Park is mostly devoted to seasonal homes. Though only 30 feet from the river, the well is apparently above the flood plain. Results of two microscopic particulate analyses conducted in 2002 determined that a hydraulic connection between the river and the well is very unlikely. The Outlet Bay Water and Sewer District wastewater land application site lies about 970 feet north of the well.

Water Quality History. Three Waters Park has experienced recurrent episodes of total coliform bacteria contamination during last three years, probably due to a break in the water distribution lines. The park plans to replace all the distribution lines in 2004. Annual tests for nitrates show concentrations ranging from 0.135 to 0.206 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l.

Susceptibility to Contamination. An analysis of the Three Waters Park well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well highly susceptible to microbial and inorganic chemical contamination because of the septic tank and surface water impinging on the sanitary set back zone. If the system is granted a waiver from the surface water setback, and relocates the septic tank, the susceptibility to microbial and inorganic chemical contamination will be in the moderate range. Susceptibility to contamination with volatile (VOC) or synthetic (SOC) organic chemicals is moderate. Unknown risks related to well construction and hydrologic sensitivity account for 8 of the 9 points in the final SOC and VOC susceptibility scores.

The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Operating and maintaining the well in conformance with the *Idaho Rules for Public Drinking Water Systems* should be one of the primary drinking water protection goals for Three Waters Park. Correspondence in the Three Waters Park water system file shows that the system is working with Panhandle Health to bring the physical plant into compliance. The system has completed microscopic particulate analyses on samples from its well. The scores on both tests were zero. Three Waters Park has applied for a waiver of the required setback distance between the well and Priest River, and contingent on its approval, is ready to proceed with relocating a septic tank, sewer lines and a troublesome water distribution line. The system monitors water quality faithfully, and is prompt to notify its customers when problems emerge.

A voluntary measure every system should employ is development of an emergency response plan. There is a simple, fill-in-the-blanks form available on the DEQ website to guide systems through the emergency planning process.

The Association should also investigate ground water protection programs like Home*A*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Because the association does not have direct jurisdiction over the entire recharge zone for its well, it will be important to form partnerships with neighboring landowners and public agencies to regulate land uses that can degrade ground water quality. Some of them may not be aware that their property is in a sensitive area where household, agricultural or business practices could have a negative impact on a public water supply. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

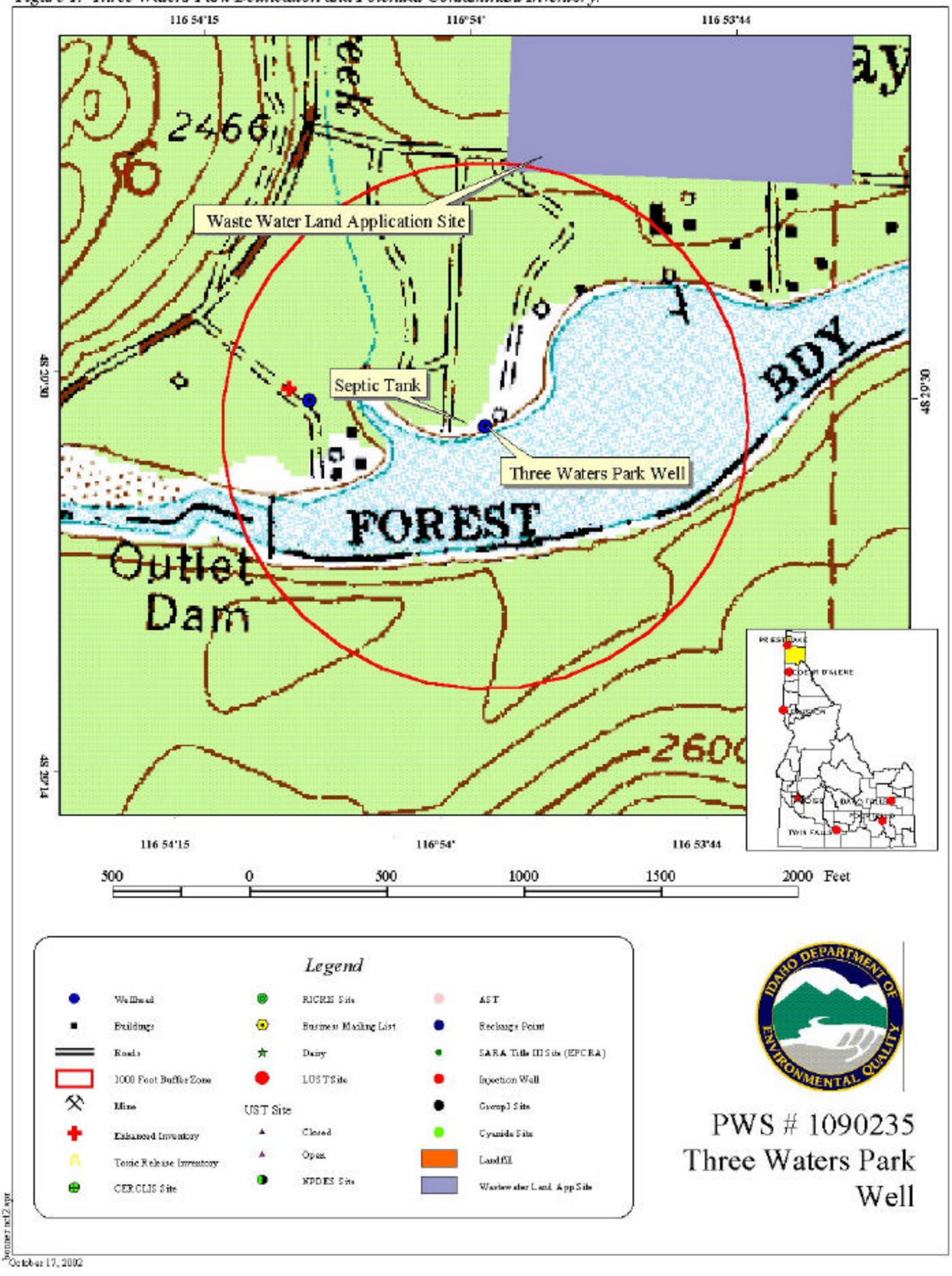
Assistance.
Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office	(208) 769-1422
State IDEQ Office	(208) 373-0502
DEQ Website:	www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper of the Idaho Rural Water Association (208) 343-7001 for assistance with drinking water protection strategies.

Idaho Rural Water Association Website:	www.idahoruralwater.com
Home * A * Syst Website:	www.uwex.edu/homeasyst

Figure 1. Three Waters Park Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name : **THREE WATERS PARK** **WELL 1**

Public Water System Number : **1090235** 10/17/02 11:37:54 AM

1. System Construction		SCORE			
Drill Date	1966				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 1997				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		**4**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		**4**			
		IOC	VOC	SOC	Microbial
3. Potential Contaminant / Land Use		Score	Score	Score	Score
Land Use	RESIDENTIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	SEPTIC TANK, SURFACE WATER	NO	NO	NO	YES
Potential Contaminant Source/Land Use Score		**2**	**2**	**2**	**2**
Potential Contaminant / Land Use - 1000-Foot Radius					
Contaminant sources present (Number of Sources)	WASTE WATER LAND APPLICATION	0	0	0	1
(Score = # Sources X 2) 8 Points Maximum		0	0	0	2
Sources of Class II or III leacheable contaminants or Microbials	YES	0	0	0	
4 Points Maximum		0	0	0	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Radius	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius		**0**	**0**	**0**	**2**
Cumulative Potential Contaminant / Land Use Score		**2**	**2**	**2**	**4**
4. Final Susceptibility Source Score		**9**	**9**	**9**	**10**
5. Final Well Ranking		***High**	Moderate	Moderate	***High**

***High due to presence of septic tank and surface water in Sanitary Setback Zone**.

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility
6 - 12 Moderate Susceptibility
> 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.